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10/552,310

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Heike Hattendorf

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EXAMINER

VAN OUDENAREN, SARAH A

ART UNIT

PAPER NUMBER

4162

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/552,310	<b>Applicant(s)</b> HATTENDORF ET AL.	
	<b>Examiner</b> SARAH VAN OUDENAREN	<b>Art Unit</b> 4162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 20-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 20-42 is/are rejected.
- 7) ☒ Claim(s) 20-25 and 28-33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/7/2008 and 3/23/2007</u> .                                  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

The abstract of the disclosure is objected to because of the > signs recited in line 2 as well as the parentheses recited in lines 2 and 4. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities: the charts on pages 5, 6, and 7 are not in English.

Appropriate correction is required.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the limitation of "glow cells" as in instant claim 39 is not taught in the specification. Examiner takes the position that "glow cells" are to be interpreted as glow plugs.

### ***Claim Objections***

Claims 20-25 and 28-33 are objected to.

Regarding claims 20-25, 29-30, and 33, the use of "<" and ">" are inappropriate as it is unclear as to whether the symbols are being used as bullet points of to

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symbolize less than or greater than. If they are to be used to represent "less than" or "greater than" they should be rewritten in a manner that is more easily ascertainable by the reader. Examiner takes the position that they are to be read as "less than" or "greater than."

Regarding claims 20-21, 24-25, 28, and 31-32, the use of parentheses is objected to.

Regarding claims 22-25, the claims do not recite the limitation of including Si, but recite the limitation of all other elements required. It is unclear as to whether Si is a required element in the claims. Examiner takes the position that Si is to be included in order to meet the limitations of the dependent claims.

Appropriate correction is required.

Claim 21 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The "and/or" limitations do not add an additional limitation as compared to claim 20.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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Claims 20, 21, 26-28, 33, and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "good" in claim 1 is a relative term which renders the claim indefinite. The term "good" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "good" with respect to oxidation resistance is indefinite.

Regarding claims 20, 21, 26-28, and 34, the use of "and/or" does not indicate clearly what applicant is claiming as his invention. Examiner takes the position that elements and method steps are not required if indicated with an "and/or" and if a list of elements is present with "and/or", such as in claim 20 line 6, it is assumed that only one of those elements is needed to meet the limitation of the claim.

Regarding claim 33, the claim recites an intermediate/final product relationship. It is unclear as to whether applicant is intending to claim the alloy before annealing or after annealing. Examiner takes the position that the alloy is being claimed before annealing.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20-23, 26-27, 30 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimizu et al (US 5,228,932). Shimizu teaches a Fe-Cr-Al alloy having excellent oxidation resistance. The alloy comprises 1-10 wt% Al (col 8, lines 62-63), 10-28 wt% Cr (col 8, line 40), 0.5 wt% or less Si (col 9, lines 14-15). Shimizu also teaches the alloy comprising less than 0.5 wt% Y, less than 0.3 wt% Hf (col 9, lines 45-50), 0.01-1 wt% Zr (col 3, lines 60-61), as well as 0.01-0.2 wt% La which is a rare earth metal element (col 3, line 60).

Regarding claim 21, the above ranges of Y, Hf, and Zr overlap the instant claims. It is noted that the "and/or" language does not require the presence of cerium mischmetal to meet the limitations of the claim.

Regarding claim 22, the above ranges overlap those of the instant claim.

Regarding claim 23, the above ranges overlap those of the instant claim.

Regarding claim 26, Shimizu teaches 0.05 wt% or less C, 0.02 wt% or less N (col 9, lines 5-7), 0.5 wt% or less Si, 1.0 wt% or less Mn (col 9, lines 14-15), 0.05 wt% or less Ti (col 5, line 25), and 1% or less Nb (col 9, lines 55-62). It is noted that the limitations of the claim recite only a maximum and therefore it is assumed that the minimum can be zero, so all elements are not needed to meet the limitations of the claim.

Regarding claim 27, Shimizu teaches the alloy comprising Ti (col 5, lines 20-25), Ta and V (col 9, lines 53-62), and lanthanoids which are rare earth metals (col 9, lines 37-53).

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Regarding claim 30, the above ranges overlap those of the instant claim.

Regarding claim 35, Shimizu teaches the alloy being used as a catalytic substrate for an exhaust gas purifying catalytic converter used in automobiles (col 1, lines 9-17).

Claims 20-21, 24-25, 28-29, and 31-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Aggen et al (US 4,414,023). Aggen teaches a ferritic stainless steel alloy comprising 3-8 wt% Al, 8-25 wt% Cr, 0-4 wt% Si (col 3, lines 15-25). Aggen also teaches a cerium mischmetal which contains Ce, La, Nd and Pr in the amount of 0.002-0.5 wt% as well as less than 0.06 wt% rare earth elements (col 4, lines 55-68). Tables I and II (col 9-10 and 11-14) teach the addition of a stabilizer in the range of 0.003-0.37 wt% Zr. It is noted that the "and/or" language does not require the presence of all the limitations to meet the limitations of the claim.

Regarding claim 21, the above range of the cerium mischmetal overlaps that of the instant claim. It is noted that the "and/or" language does not require the presence of the Y, Hf, or Zr to meet the limitations of the claim.

Regarding claim 24-25 and 28-29, the above ranges overlap with those of the instant claims.

Regarding claims 31-32, the cerium mischmetal is taught to contain Ce, La, Nd and Pr (col 4, lines 55-68).

Regarding claim 33, Aggen teaches a component comprising the alloy taught above (col 6, lines 38-41). While it is noted that certain claims are product-by-process

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and incorporate the same process steps as described in Group II, a product defined by the process by which it can be made is still a product claim (*In re Bridgeford*, 149 USPQ 55 (CCPA 1966)) and can be restricted from the process if the examiner can demonstrate that the product as claimed can be made by another materially different process such as the alternative process described above (*In re Brown*, 173 USPQ 685, *In re Fessman*, 180 USPQ 324).

Regarding claim 34, Aggen teaches preparing a melt of the alloy and casting the melt into ingots, bars, strips, or sheets. It can then be hot and/or cold rolled (col 7, lines 40-55). Aggen also teaches annealing at various points throughout the preparation (col 8, lines 35-40). It is noted that the "and/or" language does not require the presence of all of the steps to meet the limitations of the claim.

Regarding claim 35, Aggen teaches the alloy being used in automobiles (col 18, lines 38-41).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 36-37, 40, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al (US 5,228,932). Shimizu teaches a Fe-Cr-Al alloy having excellent oxidation resistance as discussed above. Shimizu teaches the alloy being used as a

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catalytic substrate for an exhaust gas purifying catalytic converter used in automobiles (col 1, lines 9-17). Shimizu does not explicitly teach the component being used in a diesel or two-stroke engine. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the alloy and component of Shimizu in an engine, such as diesel and two-stroke engines, which utilizes catalytic converters.

Regarding claim 37, Shimizu teaches the alloy being used as a catalytic substrate foil for an exhaust gas purifying catalytic converter (col 2, lines 35-45).

Regarding claim 40, Shimizu teaches a method utilizing a surface adhered Al alloy (col 6, lines 5-10). While it is noted that certain claims are product-by-process and incorporate the same process steps as described in Group II, a product defined by the process by which it can be made is still a product claim (*In re Bridgeford*, 149 USPQ 55 (CCPA 1966)) and can be restricted from the process if the examiner can demonstrate that the product as claimed can be made by another materially different process such as the alternative process described above (*In re Brown*, 173 USPQ 685, *In re Fessman*, 180 USPQ 324).

Regarding claim 42, Shimizu teaches that the exhaust gas purifying catalytic converters are used in other fields to convert harmful gases to harmless products (col 1, lines 15-20); however Shimizu does not explicitly teach using the exhaust system in a fuel cell. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the exhaust gas system of Shimizu in a fuel cell as it would be performing the same function of converting harmful gases to harmless products.

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Claims 36, 38, 39, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aggen et al (US 4,414,023). Aggen teaches a ferritic stainless steel alloy as discussed above which can be used in automobiles (col 18, lines 38-41). Aggen teaches that the alloy can be used in electrical resisting heating elements and catalytic substrates such as may be used in catalytic systems and converters for automobiles (col 18, lines 38-41). Aggen does not explicitly teach the alloy being used in an engine; however, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the alloy and component of Aggen in an engine, such as diesel and two-stroke engines, which utilizes catalytic converters.

Regarding claim 38, Aggen teaches the product being formed in the shape of a wire (col 4, lines 1-2).

Regarding claim 39, Aggen teaches the alloy being used for heating elements (col 18, lines 39-40), but does not explicitly teach the use of the alloy in a glow cell. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the alloy and component of Aggen in a glow cell because the properties that make the alloy useful as a heating element would make it useful as part of a glow cell, which is assumed by examiner to be the equivalent of a glow plug, which is used to as a heating device in an engine.

Regarding claim 41, Aggen teaches the alloy being used for electrical resisting heating elements. The limitation of "for electrical preheating of exhaust cleaning systems" is considered intended use.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARAH VAN OUDENAREN whose telephone number is (571)270-5838. The examiner can normally be reached on Monday-Thursday, 9:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SVO

/Jennifer McNeil/

Supervisory Patent Examiner, Art Unit 4162

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